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OFFICE OF TRAINING

DIRECTIVE

25X1

COURSE: Instructor Training

SUBJECT: Methods of Instruction: Demonstration and the HOURS: 1
the Application Stage

METHOD OF PRESENTATION: Lecture & discussion INSTRUCTOR:

OBJECTIVES OF INSTRUCTION: To discuss the demonstration as a means of presenting instruction; to present some techniques an instructor must consider in preparing and presenting a demonstration; to show students a demonstration and have student participation in the demonstration and application stage.

SUMMARY OF PRESENTATION:

JIR VAULT COPY NO. 912

SUBJECTS WITH WHICH COORDINATION IS REQUIRED:

REFERENCES: Methods of Instruction: Demonstrations;
Military Instruction.

REMARKS: see outline for training aids and equipment

25 YEAR RE-REVIEW

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TAB

Instructor Training Course

Lesson Plan

Title : **Methods of Instruction: The Demonstration and the Application Stage** 50 Min.

Objectives : 1. To discuss the demonstration as a means of presenting instruction
2. To present some techniques an instructor must consider in preparing and presenting a demonstration
3. To show students a demonstration and have student participation in the demonstration and application stage

Reference : [] "Methods of Instruction: Demonstrations" []
"Military Instruction"

Training Aids: Pierce wire recorder and tape
Operation sheet "How to record on a wire recorder"
Chart ITC #5 "Developing Skills and Techniques"
Chart ITC #15 "Pierce Wire Recorder"
Blackboard, "Application Stage" 1 package of cigarettes and matches

Personnel : 1 assistant

Equipment and Materials : 1. Operation sheets for class of "Wire Recorder and its use"
2. 6 Pierce Wire Recorders and tape with adequate extension cords

I. Presentation

A. Introduction (Motivation)

1. The instructor must frequently show as well as tell. The demonstration is one of his most effective methods of instruction if
2. The understanding of the uses of the demonstration and the application stage, how to plan and conduct it is an essential requirement for all instructors
3. A demonstration will be given on the use of a wire recorder
4. The application will follow the demonstration
5. At the end of the demonstration a critique of this method of instruction will be conducted

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B. Explanation

1. Demonstration is used to teach:

Note: Show with the use of the blackboard

- a. knowledge - weapon assembly - operation
- b. skills - firing - application (activity)
- c. techniques - positions - application
- d. application - expert rifleman - viewing

Note: Show chart "learning skills"

lecture	demonstration	application	
<u>tell</u>	<u>show</u>	<u>do</u>	_____ explain relationship
knowledge	skills	performance	

C. Demonstration

Note: use chart "Pierce Wire Recorder" information sheets for each student, 6 wire recorders and assistant

1. Introduction (motivation) necessary for demonstration (why-how-what)

example:

Recorder is used to: (Debrief, Control Interpreter, Keep records)

- 2. Explain - use of magazine and microphone
- 3. Have assistant go through complete demonstration
- 4. Go through demonstration with assistant step by step

II. Application

- 1. Controlled practice with instructor, assistant and class. Two students on each machine, divided into a coach and pupil team. Step by step controlled by instructor.
- 2. Coach becomes pupil - step by step controlled by students ability - instructor supervises performance with assistant.

Note: Pass out information sheet

III. Examination (Assistant and instructor check student performance)

IV. Critique

- 1. Did demonstration show planning?

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2. Was demonstration and explanation coordinated?
3. Do you understand what a demonstration is and how it should be conducted.
4. Were assistants used to the best advantage?

TAB

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METHODS OF INSTRUCTION: THE DEMONSTRATION

The demonstration is another effective method of presenting subject matter. Its effectiveness is in its appeal to the sense of sight. A well-staged demonstration stimulates interest. The fact that it is realistic not only sustains interest but also intensifies learning.

The demonstration is not distinguished from other teaching procedures. It is usually preceded by a brief lecture, frequently leads to a directed discussion, and is followed by application and examination. It should not be considered a separate and distinct teaching method but one to be used in combination with other methods.

As an aid to the instructor's conducting a good demonstration, it is the purpose of this summary to show some of the uses, the principal factors to be considered, the techniques, and the accepted types of demonstration. The demonstration can be used:

1. To teach knowledge.

An understanding of certain basic principles is considered essential to successful performance in most technical fields. In addition, a knowledge of the operation and function of equipment is necessary. The instructor uses the demonstration method in teaching this type of information. He explains and shows the construction and function of the equipment under consideration to enable the student to gain accurate and lasting impressions.

2. To teach skills.

Skills are learned by accurate and repeated practice. In developing skills the demonstration establishes a visual image of how the skill should be performed. A demonstration which sets out to show the correct way of doing a thing must be perfect in every detail. It must be carefully and in many cases, slowly performed by the instructor so that each step is thoroughly understood by the student.

Frequently, skills consist of a series of complicated movements or steps. These skills cannot be taught by a single demonstration and must be broken into consecutive steps and each step demonstrated separately. Only one operation should be demonstrated at a time. The number of steps demonstrated during a period of

instruction must be determined in accordance with the complexity of the skill and the ability of the students. Immediate application by the student of the skill taught must be made for effective learning.

3. To teach techniques.

A technique is the ability to apply skill and knowledge to the solution of a problem. Learning techniques must not be left to chance. They must be taught and practiced. The teaching of techniques through a demonstration shows the student how a given procedure in the application of pertinent knowledge and skills contributes to the solution of a problem.

In training instructors to use various instructional techniques such as the use of training aids or problem solving the demonstration lesson conducted by an accomplished instructor is an invaluable method. Demonstrations of team functioning and tactical movements is another illustration of the use of the demonstration method to teach techniques.

4. To teach appreciations.

By a demonstration the instructor shows an entire activity in its finished form, creates interest and appreciation of the skill. All skills and techniques in which the elements of precision, speed, and form are the primary qualifications can be effectively introduced by a realistic demonstration.

There are varied forms of the demonstration. These are:

1. Classroom demonstration may be performed by the instructor. He may or may not use assistants. The instructor performs and explains each step in the process. Technical training is best given by this method of classroom demonstration.
2. Displays must be arranged so that all students can view them easily and quickly. For large classes it may be necessary to provide duplicate displays or to use the "county fair" system. By the latter is meant that instructors or guides, describe each exhibit or display to sections of a class; each section rotates from one exhibit to another. Displays which are of general interest to a block or phase of instruction may be shown for a period of time but must not be exhibited in a way as to distract from other courses of instruction.
3. Field demonstrations are effective ways of illustrating tactical exercises. In conducting this type of demonstration, the instructor must caution against doing too much at one time, showing movements or principles for which the students have not been prepared, and extending the applicatory tactics beyond

practical bounds. Care must also be taken that the succeeding phases of a field demonstration do not occur too rapidly so that one phase is not properly assimilated before succeeding phases are presented.

4. Motion pictures portray situations which otherwise would be left to the imagination of the students. In many cases it would be impossible to give the same instruction by the other means of a field demonstration.

5. Skits and playlets may be used to dramatize an operational activity. They are designed to show both correct and incorrect procedures. Caution must be exercised by the instructor lest he demonstrate incorrect procedures to the point of de-emphasizing those which are correct.

In order to present a successful demonstration, these following steps must be considered:

1. Preparation.

This is the analysis step, the phase of planning which requires the instructor to determine the objective(s) or specific purpose(s) of the demonstration, analyze the equipment available, the training situation, the performance steps in their proper sequence, and his technique of presentation. In his analysis of the training situation, for example, the physical aspects of the instruction must be considered first. The demonstration necessitates arrangements for the use of equipment, tools, weapons, and other materials. If students are to perform each step of the operation immediately after the demonstration of the step, the instructor must plan for directing the practical work along with the demonstration. Short demonstrations are more effective than long ones. The instructor must understand that even his superior students can retain only a few visual images at a time. Although a demonstration may be used to introduce new subject matter, generally it should not be used without the students' having some elementary knowledge of the subject. The instructor must keep the specific objective(s) of the demonstration in mind during the preparation. This will underline each of the following considerations in preparing a demonstration:

a. Arrange all necessary equipment so that it is immediately accessible. (Equipment which will detract from the instruction must not be brought before the class until this is to be used.) Interest and attention of the class are diverted if a delay occurs in bringing into play the necessary pieces of equipment. The instructor should be certain that every piece of equipment is in proper working condition prior to the actual demonstration. Rehearsal will insure proper function.

- b. Arrange the instructional area so that all students will be able to hear the instruction and see the demonstration. Demonstrations performed with small pieces of equipment frequently necessitate the students standing in a semicircle around the instructor.
- c. Prepare to demonstrate only one step at a time.
- d. Anticipate steps in the demonstration which may cause difficulty. Plan supplementary instruction for the slower student.
- e. Formulate a written plan in which there is provision for each step in the performance of the operation. Rehearse the plan. This rehearsal is important in determining the amount of time necessary for the demonstration and in acquainting the instructional staff (if required) with the entire procedure.

2. Presentation.

The demonstration must be performed in the correct way and at the correct time. In his preparation for the presentation of a demonstration the instructor must plan to:

- a. State the purpose of the activity being demonstrated, explain its principal steps briefly, and demonstrate the complete procedure. Showing the complete activity, later to be demonstrated step-by-step, prepares the student for what he is to learn and establishes a level of performance for him in the applicatory phase.
- b. Show and explain at the same time. During the demonstration the instructor is expected to explain the actual performance. Immediately preceding the performance of a given step in a demonstration, the instructor must tell exactly what he intends to do. While he is performing the step he must explain his procedure and indicate the reason or reasons for his executing the step.

Each important step must be emphasized so that it is clear to the student. The instructor must demonstrate the first step, give the name of the second step, then demonstrate it showing a break between the two. These steps must be well outlined for the student so that he will be able to repeat the performance accurately.

- c. Arrange the classroom so that each student can see the demonstration. The instructor must locate himself and the equipment so as to allow each student to see the details of his performance.

d. Use visual aids to supplement the demonstration. Although the demonstration involves the use of tools and other special equipment it is often necessary to use specific visual aids to convey complete understanding.

e. Check frequently to determine the student's understanding of the instruction. This can be done by asking questions or requiring individuals to repeat the performance before the group. There are steps in most operations which constitute logical points for checking. The instructor should invite questions from the students although time for questions can not always be pin-pointed.

f. Use assistants to the greatest advantage. In presenting a skill where physical exertion is required on the part of the instructor he should use an assistant to demonstrate the skills because it is difficult to perform physical activity and speak at the same time. The assistant must be trained to time his movements with the instructor's explanations and should recognize cues and perform his functions quietly and efficiently.

g. Summarize the essential point at the end of the demonstration. In this the instructor should emphasize the steps. These must be presented in the same order as they occurred in the demonstration.

h. Set high standards for students. The instructor or his assistant must be able to perform the demonstration skillfully. This is important in order to insure that no incorrect learning results. The student's respect and confidence in the instructor's ability as a technician and as a teacher may be established also.

3. Examination and Application.

In order for a student to learn he must be told what he is to do. He must be shown how to do it and then given an opportunity to practice until he is able to do it. The applicatory step should follow immediately after the demonstration and at the same site if possible. Each step must be understood before presenting the next one. The learning that comes from practice depends largely upon supervision. The instructor and assistants should move among the students to see that directions are being followed and to help those who need additional instruction. When the majority of the students have missed fundamental points the instructor must repeat the explanation and the demonstration. When only a few students require further assistance preparation must be made for the instructor or his assistants to give it to them as the work progresses. The more skilled students' work can be utilized for this purpose. After the students have had an opportunity for

some practice the instructor should raise the standard of the performance and vary the application to other situations of the skills being taught.

4. Summary.

Following the applicatory step, the instructor should summarize for the students what they have learned. The application stage is the stage of the instructional process in which students are given the opportunity to put into practice the procedures and ideas previously presented.

Improving the demonstration. In order to improve his use of this demonstration method of teaching the instructor should make every effort to evaluate his work. A self-check can be made with little difficulty by the instructor's consideration of the following questions in relation to each demonstration he presents.

1. Were the students ready for the demonstration?
2. Were all necessary tools, equipment and personnel available and properly placed?
3. Were all students able to see and hear the demonstration?
4. Were the principal steps presented in the order indicated in the lesson plans?
5. Did the instructor ask questions? Did the students present pertinent questions?
6. Were supplementary visual aids used effectively?
7. Was information presented which might well have been omitted? Was information omitted which should have been included?
8. Was the student's interest maintained throughout the demonstration?

Summary. The demonstration is one of the most effective methods of instruction. Learning is more real and permanent when information is presented by showing the student actual functions and operations. Instruction of a specialized type can not be reduced to a mere telling process. Showing or demonstrating and then doing is more practical. A well-planned and well-conducted demonstration can be a shorter route to field learning. With immediate application of the subject matter of the demonstration, by the student, the instruction is most likely to be permanent.

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THE APPLICATION STAGE IN INSTRUCTION

There are many opportunities for applicatory exercises in training. The ratio of time spent in presentation to time spent in application depends upon the subject and the state of training of the student. However, in general, the instructor will spend more time conducting practical exercises than he will spend in presenting the basic material. The success of the instruction depends upon the effective use of the application stage. Every instructor must be constantly on the alert for opportunities to use this stage of instruction in his teaching. In most instructional situations the student can be given an opportunity to apply the principles taught immediately after the presentation. One mark of a good instructor is his ability to set up situations that require his students to apply the principles or procedures he is teaching.

Whenever a demonstration is presented the application phase should follow immediately. However, the application stage is not limited to the demonstration method. It can be used in problem solving, directed discussion and case studies.

In order to use this stage of instruction effectively the instructor must know the methods of application and how they are employed. He must have some general rules to follow in the conduct of practical exercises and he must understand the general principles which must be considered by the instructor when conducting the applicatory exercise.

Methods of instruction used in the application stage. Those methods most commonly used in the application stage are:

1. Controlled practice method (group performance). In controlled performance all students do the same thing at the same rate and at the same time under the supervision of the instructor. The steps in this method are:
 - a. Explain and demonstrate while the students observe.
 - b. Talk the students through the practice.
 - c. Correct students' errors.
 - d. Vary the conditions of student application.

One of the values of the controlled performance method is that it affords maximum control and observation of student activities and consequently, it facilitates on-the-spot correction of errors made by students during the imitation step. To achieve this however, the instructor must give the class clear directions about the procedure for controlled performance. The instructor must always be alert to see that the trainee follows such directions. It is a common failure for instructors to become so engrossed in their own work that they fail to keep the class together during the steps. When the class is large and assistant instructors must be used, it is necessary that they too, control performance procedures.

2. Individual performance method. The individual performance method of application allows the student to work at his own rate of speed and to perform a skill or complete operation. In this method the instructor exercises a minimum of control over the student's activity. Supervision is important. The instructor must observe closely and correct any errors which might lead to the formation of wrong habits or procedures.

Individual performance is also used as the initial method of application in teaching simple skills and techniques. A lesson in map reading is a good example of the use of this method as the initial application exercise. The instructor, in presenting the lesson, explains and demonstrates how to measure distance on a map. In the practical exercise following the presentation the students practice measuring distance, each man working independently at his own rate and with his progress checked by the instructor and his assistants.

3. Coach and pupil. This method is used very effectively for teaching those who have mastered the basic fundamentals of a skill or technique. It is a method in which students are paired off and act alternately as coach and pupil under the direction and supervision of the instructor and his assistants. When properly applied and guided, this method should cause trainees to think as well as do, increase alertness, and develop initiative, reliance, and skill in giving directions and cooperating with others.

4. Team practice. This is used when individuals perform related tasks in a group. Team practice is primarily concerned with team skills, techniques, and in general, just how a group functions as a unit in solving field problems. Individual skills and techniques are secondary. During team practice the instructor works as a coach; the students are the players. Each has learned his role; now he performs as a member of the team. He participates in team "scrimmages" to learn timing, correct positions and procedures, and an appreciation of the part each team member plays in the operation. Team practice is usually conducted in two phases: technical and tactical.

a. Technical phase. The team training of a crew, squad, or detachment should begin with "walk through" practice or practice at reduced distances and speeds. In this practice only team fundamentals should be stressed. No attempt should be made to simulate actual conditions in the initial exercises. This does not mean that the trainee should not be realistic, but realism in the initial exercises should stem from concentration on team fundamentals. For example, to introduce simulated operational conditions too soon and too suddenly will tend to obscure the learning of fundamentals. In this type of training the instructor should exercise control and make on-the-spot correction of any errors committed.

b. Tactical phase. As the team masters the technical fundamentals the applicatory exercises should be expanded so that all phases of actual operations are included. It is this objective toward which all prior team training leads. The tactical phase of team training should bring into play all the knowledge and skill of every man. The previous instruction and practice, which included a great variety of individual subjects, finally is fitted together into a single training period. The conditions and the requirements of the tactical exercises should be varied so that members of the team will develop judgment and facility in applying skills and techniques to the solution of new and varied tactical problems.

Although the examples given here are primarily of the military maneuver type, the principles expressed are equally applicable to the training of any type of team or group which will later approach problem situations as a unit.

Conduct of practical work. The applicatory exercise must be adequately supervised by the instructor if it is to be effective. Frequently, instructors who are in charge of practical exercises get the false notion that they are not teaching. Actually, the application stage is as much part of the learning process as the presentation stage, and the instructor who feels that his job is complete after he explains and demonstrates the subject matter has fallen into a dangerous way of thinking. The instructor can facilitate learning during the practical exercise if he follows a few simple principles in his conduct of the student activity.

1. Present specific directions. Be sure every student knows what he is to do, why he is to do it in the manner described, and where he may obtain help.
2. Repeat instruction when the need arises. If a majority of the students seem to miss certain fundamental points, the explanation and demonstration should be repeated for the entire class. If only a few students require additional instruction

the assistants can give individual aid, or to a small group the material may be re-taught.

3. Achievement standards are progressive. Emphasis should be placed upon completeness and accuracy of form or procedure. After the initial application the standards of the applicatory work should be higher and less assistance should be necessary. Merely to repeat an activity has little value unless higher standards are expected. The student must be made to appreciate the progressive nature of his practical work or he will feel that the exercise is something to keep him busy.

4. Conditions should be realistic. The sense of realism should prevail in all applicatory training. However, this is not always possible or desirable in the initial stages of application. Here realism must stem from the student's understanding of why it is necessary for him to develop certain skills and techniques. He must realize that he is learning skills and techniques for an ultimate purpose. Good instruction is always realistic.

5. Things should be applied as taught. Perfection is achieved through practice only if the student practices the correct movements and procedure.

6. Indirect assistance is best. The instructor and the assistant instructors must be ready to give assistance at all times during the practical work. When giving aid to the student the instructor should be careful not to give too much direct assistance. Whenever possible, assistance should be given indirectly by asking the student to recall certain knowledge or by appropriate questioning guiding the student in analyzing his own difficulty. This manner of giving assistance will encourage the student to rely upon his own resourcefulness and initiative.

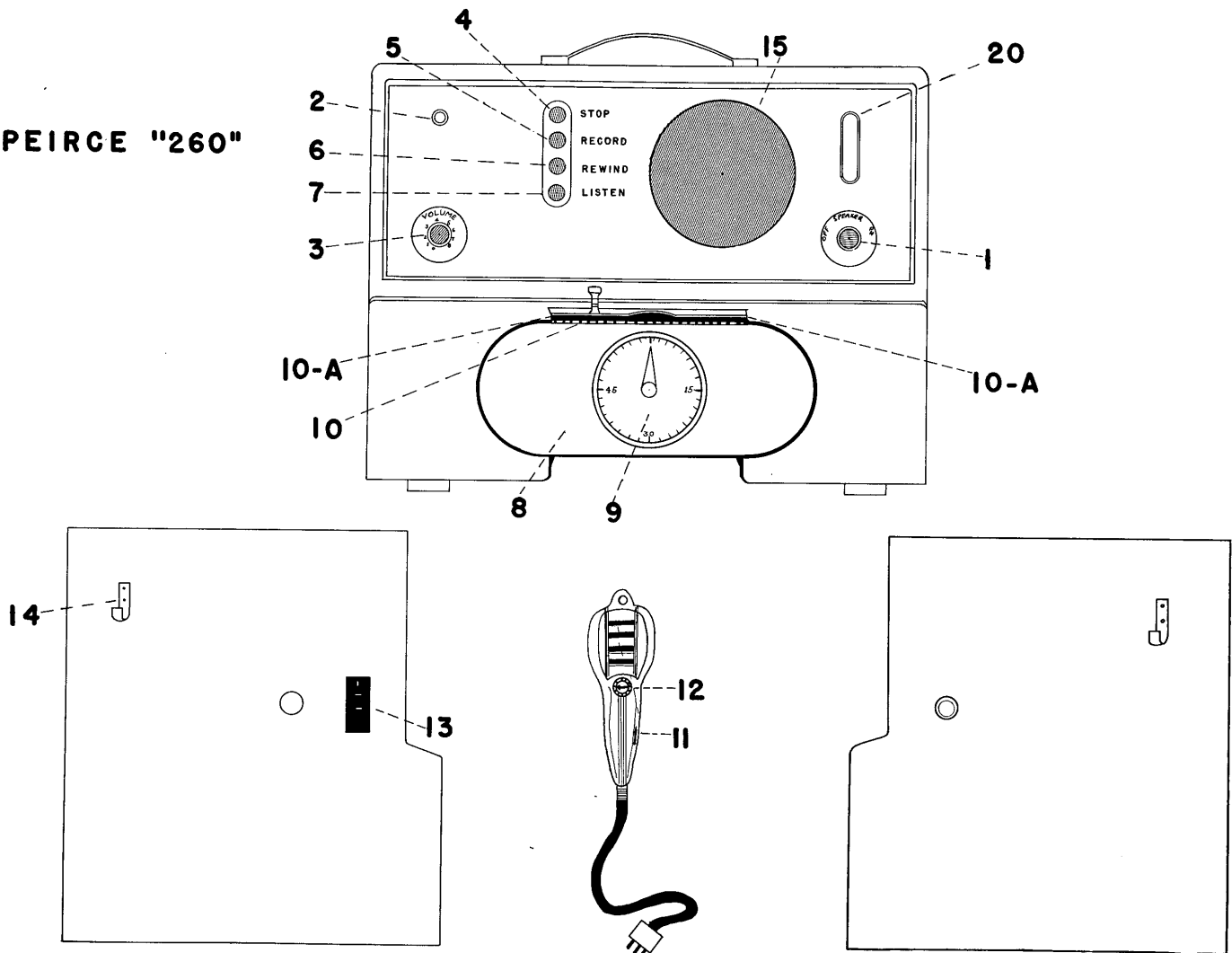
7. Constant supervision is imperative. The success of practical work is not measured by the student's apparent activity but by the degree of desirable change which is brought about in his progress.

8. Each step must be learned before moving to the next. The instructor should avoid introducing too many operations, procedures, principles, or problems at any one time. Introduce a few learning activities, provide for sufficient practice, review material taught and practiced, and then proceed to the next unit of instruction. Be certain that students have learned the essentials before proceeding to the next stage.

Summary. The application of subject matter cannot be left to chance. The instructor must plan some application of the material he presents as soon after its presentation as possible. We learn by doing only if it is accomplished by intelligent guidance and supervision which insures correct and progressive learning.

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PEIRCE "260"



CONDUCTING THE DEMONSTRATION

PLAN DETAILS CAREFULLY

BE ALERT TO CLASS

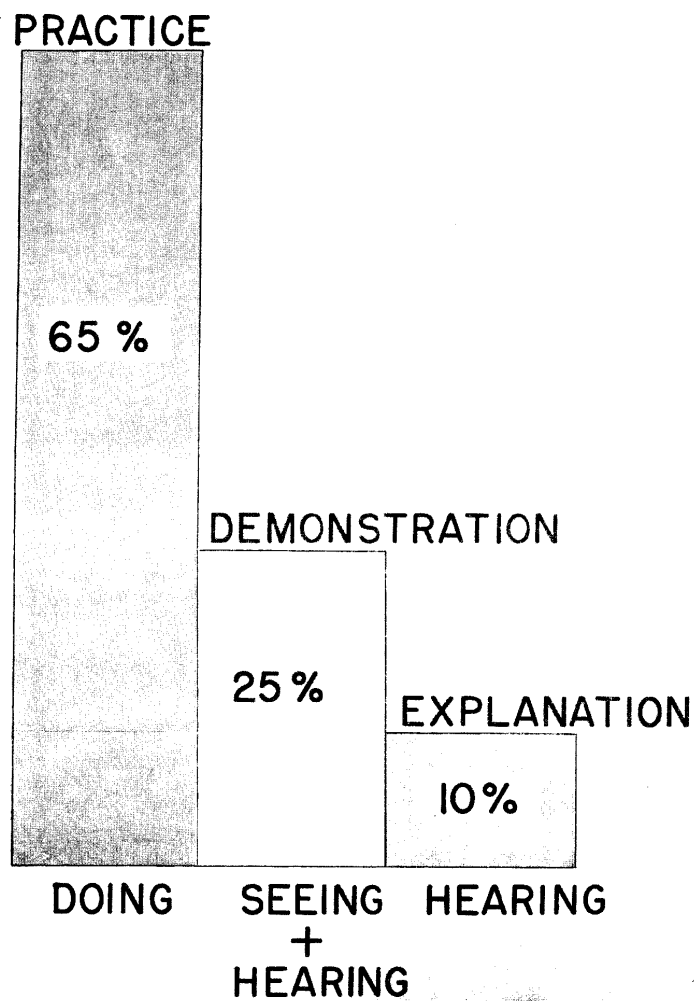
COORDINATE EXPLANATION & DEMONSTRATION

SET HIGH STANDARDS

USE ASSISTANTS TO BEST ADVANTAGE

EMPHASIZE SAFETY PRECAUTIONS

DEVELOPING SKILLS & TECHNIQUES



TAB

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Instructor Training Course

Lesson Plan

Title: Methods of instruction: The Demonstration Time Required 50 min.

Objectives:

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1. To discuss the demonstration as a means of presenting instruction.
2. To present some techniques an instructor must consider in preparing and presenting a demonstration.

References:

"Methods of Instruction: Demonstrations"
"Techniques of Military Training"

Training Aids:

Pierce wire recorder and tape
Operator for recorder
Operation sheet "How to record on a wire recorder"
Chart "Developing Skills and Techniques"

I. Presentation

A. Introduction

- (1) The instructor must frequently Show as well as Tell.

The demonstration is one of his most effective methods of instruction if properly planned and presented.

- (2) The understanding of the uses of the demonstration and how to plan and conduct it is an essential requirement for all instructors.

- (3) A demonstration will be given on the use of a wire recorder

- (4) At the end of the demonstration a critique of this method of instruction will be conducted.

NOTE: Demonstrate the value of showing by asking a student to tell without showing how to smoke a cigarette. Follow his instruction literally.

B. Demonstration

- (1) Recording on a Pierce Wire Recorder

II. Critique

- (1) Did demonstration show planning? Alertness?
- (2) Was explanation and demonstration coordinated?
- (3) Were assistants used to the best advantage?
- (4) Were standards applicable to the group?

Summary:

- (1) Strive to Show as well as Tell.
- (2) "Seeing is believing" and often is understanding as well.
- (3) Of all types of presentations, the demonstration is usually the most interesting to students.
- (4) It is necessary to plan details carefully
 - (a) Arrange tools and equipment
 - (b) Arrange students
 - (c) Follow a plan
 - (d) Demonstrate one thing at a time

Point of exp. demon. is how much more effective "showing" would have been than "telling"

Title: Preparation of Demonstration Problem

Time Required: 50 min.

Objective:

1. To have students prepare a plan for five minute oral demonstration.

Training Aids:

Chart paper, crayons, compass, maps, overlay sheets, colored chalk and blackboard for student use in planning their demonstrations.

I. Presentation

A. Introduction

This lesson is devoted to students planning for a demonstration. Students are afforded a selected list of topics to choose their subject form. Certain materials such as paper for charts, crayon, compass, etc., will be available in order that students may be able to make training aids. At the end of the students presentation of the demonstration the plans will be submitted to the instructor for appraisal and evaluation.

B. Explanation

Pass out material with topics for selection.

Go over what students are to do:

1. Select topics
2. Prepare plan for 5 minute demonstration

Tell students what is planned for remaining sessions of demonstration:

1. Student to present demonstration orally
2. Students voices to be recorded
3. Critique after each students presentation. Group to constructively criticize each presentation with written comments to be given to student presenting demonstration
4. Play-back of student demonstration
5. Same above procedure to be followed with each student with a final critique

II. Application, Discussion and Critique: in next lesson

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Instructor Training Course

Lesson Plan

Title: Presentation of a Demonstration

Time Required: 170 min.

Problem by Students

Objectives:

To give student an opportunity to present a formal, demonstration

To give student an opportunity to record his demonstration

References:

"Methods of Instruction: The Demonstration"
"Techniques of Military Training"

Training Aids: Recording Equipment
Blackboard, charts, crayons, paper

I. Presentation

A. Introduction

1. The student will learn the technique of presenting a demonstration.
2. As an instructor, he will find it a useful method of instruction.
3. Each student will demonstrate a process and a recording will be made of his instruction.
4. At the end of the demonstrations a critique of this method of instruction will be conducted.

B. Demonstration

1. Each student will present his prepared demonstration.
2. Record his activity

II. Critique

A. Summarize the instruction

B. Students will offer their evaluation of this method of instruction as to:

1. Effectiveness
2. Suggestions for improvement

SUGGESTIONS FOR DEMONSTRATIONS

Materials available: blackboard, chart paper, crayon. (See instructor for special items.)

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1. How to start a car.
2. How to tie a necktie.
3. How to tie a square knot or any knot.
4. How to read or use a map.
5. Explain difference in time zones.
6. How to open a combination safe.
7. How to interview a person.
8. Explain the principle of flight.
9. Explain some mechanical principle, such as, the lever, gears, etc.
10. Hand-to-hand fighting.
11. How to teach semaphore communications.
12. Explain some movement of the manual of arms.
13. Explain some exercise of calisthenics.
14.
15. Demonstrate any sports skill.
16. Technique of lecturing.
17. Military tactics of the individual.
18. Any first aid technique.
19. Use of a hand tool.
20. How to write a message in a message book.
21. How to work a cross word puzzle.
22. How to use a film strip or slide projector.
23. How to use a typewriter.
24. How to use a movie projector.
25. Any other item that you can demonstrate.

METHODS OF INSTRUCTION: THE DEMONSTRATION

The demonstration is another effective method of presenting subject matter. Its effectiveness is in its appeal to the sense of sight. (It has been established that students learn more through the sense of sight than through any one of the other senses.) A well-staged demonstration stimulates interest, and the fact that it is realistic not only sustains interest, but also intensifies learning. The effect of seeing that a thing can be done eliminates doubts and strengthens the student's desire to do it himself.

The demonstration is never sharply distinguished from other teaching procedures. It is usually preceded by a brief lecture, frequently leads to a directed discussion, and is followed by application and examination. It should not be considered a separate and distinct teaching method, but one to be used in combination with other methods in presenting various kinds of subject matter.

As it is with the lecture, the success of the demonstration depends upon the instructor's skill in planning and conducting the demonstration. It has been said that a poor demonstration is worse than no demonstration at all. As an aid to the instructor's conducting a good demonstration, it is the purpose of this summary to show some of the uses, the principal factors to be considered, the techniques, and the accepted types of demonstrations. Each instructor is expected to apply these essentials wherever possible in his specific training program.

The demonstration method can be used:

- a. To teach knowledge. An understanding of certain basic principles is considered essential to the successful performance work involved in most technical fields. The demonstration can be used to aid in the development of this understanding.

In addition to an understanding of principles, a knowledge of the operation and function of equipment is necessary. The instructor uses the demonstration method in teaching this type of information. He explains and shows the construction and function of the equipment under consideration in such a manner as to enable the student to gain accurate and lasting impressions.

- b. To teach skills. Skills are learned by accurate and repeated practice. In developing skills, the demonstration establishes a visual image of how the skill should be performed. A demonstration which sets out to show the correct way of doing a thing must be perfect in every detail. It must be carefully and, in many cases, slowly performed by the instructor so that each step is thoroughly

-2-

grasped by the student.

Frequently, skills consist of a series of complicated movements or stops. Such skills cannot be taught by a single demonstration and must be broken into consecutive steps and each demonstrated separately. Short demonstrations are more effective than long ones. Only one operation should be demonstrated at a time. The student must be given an opportunity to practice each step as it is completed. A new step should not be given until the student understands the preceding one. The instructor must understand that even his superior students can retain only a few visual images at a time. The number of steps demonstrated during a period of instruction, therefore, must be determined in accordance with the complexity of the skill and the ability of the student.

Demonstrations should be given as the need arises. Although a demonstration may be used to introduce new subject material, generally it should not be used without the student having some elementary knowledge of the subject. Little good comes from demonstrating a process which does not have immediate use or for which the students are not properly prepared. The greater the time lapse between the demonstration and its use by the student, the poorer the student performance.

- c. To teach techniques. A technique is the ability to apply skill and knowledge to the solution of a problem. Learning techniques must not be left to chance. They must be taught and practiced. The teaching of techniques through a demonstration shows the student how a given procedure in the application of pertinent knowledge and skills contributes to the solution of a problem.

In training instructors to use various instructional techniques such as the use of training aids, the demonstration lesson conducted by an accomplished instructor is an invaluable method. Demonstrations of team functioning and tactical movements is another illustration of the use of the demonstration method to teach techniques.

There is a problem, however, which the demonstration poses for the instructor. If the demonstration is to be realistic, it must show how to solve a specific problem. On the other hand, the demonstration must serve as a guide to the solution of varied problems in the same general category as that of the problem used in the demonstration. The solution lies in stressing procedure. For example, in demonstrating a tactical problem requiring a plan of action as the solution, the instructor should emphasize the importance of the following procedure:

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- (1) Interpreting the mission.
- (2) Making a proper estimate of the tactical situation.
- (3) Formulating possible plans of action.
- (4) Selecting the most feasible plan.
- (5) Subjecting the plan to all possible tests before accepting it as the solution.

d. To teach appreciations. The instructor who shows an entire activity in its finished form creates interest and appreciation of the skill. All skills and techniques in which the elements of precision, speed, and form are the primary qualifications, can be effectively introduced by a realistic demonstration. Proper attitudes toward use and care of equipment and topographical irregularities can be accomplished by means of the demonstration. There are various forms of demonstrations. They may be:

- (1) Classroom demonstration.
- (2) Field or display demonstration.
- (3) Motion pictures, skits, and playlets.

The classroom demonstration may be performed by the instructor with, or without, assistants. The instructor performs and explains each step in the process and, in doing this, shows the operation and function of the particular piece of equipment under consideration. Technical training is best given by this method of classroom demonstration.

Displays are another form of the demonstration, and to be effective they must be arranged so that all students can view them easily and quickly. For large classes it may be necessary to provide duplicate displays or to use the "county fair" system. By the latter system is meant that instructors or guides describe each exhibit or display to sections of a class; each section rotates from one exhibit to another. Student application or testing of what is demonstrated should take place at each site immediately following the demonstration, if possible. Displays which are of general interest to a block or phase of instruction may be shown for a period of time but must not be exhibited in a way as to distract from other courses of instruction.

Field demonstrations are effective ways of illustrating tactical exercises. In conducting this particular type of demonstration, the instructor must caution against doing too much at one time, showing

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movements or principles for which the students have not been prepared, and extending the applicatory tactics beyond practical bounds. Care must also be taken that the succeeding phases of a field demonstration do not occur too rapidly so that one phase is not properly assimilated before succeeding phases are presented.

Motion pictures or training films are ready-made demonstrations. The motion picture frequently portrays situations which otherwise would be left to the imagination of the student. This is especially true when an overall view or impression is needed, when unlimited material must be presented, when noise of actual operation will prevent explanation, when actual use or operation of product is at a distance, when operation has to be slowed down or stopped for explanation, or when it is safer to get a preliminary view from a film. In many cases it would be impossible to give the same instruction by means of a field demonstration.

Skits and playlets are a form of demonstration wherein the instructor and, if necessary, his assistants, dramatize an operational activity. They are effective when used to demonstrate procedures to be followed in the care and maintenance of tools and equipment or to portray the customs of a group of people. Both of these forms, the skit and the playlet, are designed to show incorrect procedures, but the instructor must never demonstrate the wrong way, to the point of de-emphasizing or neglecting the correct method.

To be effective the skit or playlet must be carefully planned and smoothly presented. Usually, several rehearsals are required to assure a smooth presentation.

Technique of conducting a demonstration. There are many considerations in presenting a profitable demonstration.

- a. Preparation. This step again is the analysis step, the phase of planning which requires the instructor to determine the objective or specific purpose of the demonstration, analyze the equipment available, the training situation, and the performance steps in their proper sequence. In his analysis of the training situation, for example, the physical aspects of the instruction must come first. The demonstration necessitates arrangement for the use of equipment, tools, weapons, and other materials. If students are to perform each step of the operation immediately after the demonstration of the step, arrangements must be made for directing the practical work along with the demonstration. This requires great care in preparing the lesson. The instructor must:

- (1) Arrange all necessary equipment so that it is immediately accessible; so placed that each piece of equipment can be brought into use with little loss of time. Caution must be exercised,

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however, in arranging equipment, for those which will detract from the instruction must not be brought before the class until they are to be used. The instructor is aware that interest and attention of the class are diverted if a delay occurs in bringing into play the necessary pieces of equipment. A demonstration loses its effectiveness if the instructor is forced to wait while an assistant procures a tool or device which has been overlooked in arranging the physical setting for the demonstration. The instructor should check to make sure that every piece of equipment is in proper working condition before starting the demonstration. Previous rehearsal will assure the instructor that every instrument or piece of equipment will function properly. Awkward blunders result in embarrassment for the instructor and distract from the effectiveness of the instruction. The instructor's performance must run smoothly. In the event that the demonstration contains a particularly difficult step the instructor should tell the students of the difficulty in the explanation prior to the actual demonstration. To explain such a difficulty after the instructor has failed to perform the step correctly does not convince the students of the instructor's efficiency. This phase of the demonstration, therefore, must be given much thought and rehearsal.

- (2) Arrange the instructional area so that all students will be able to hear the instruction and see the demonstration. If possible, each student should view the step from the angle at which he will perform it. Obviously, the demonstration method appeals to the sense of sight. It is most important, therefore, that the instructor consider this detail of arranging his students so that each is able to see the demonstration. Demonstrations performed with small pieces of equipment frequently necessitate the students standing in a semi-circle around the instructor who explains the equipment. The size of the class, the size of the equipment to be demonstrated, and the length of the demonstration are factors in arranging the instructional area.
- (3) Keep the specific purpose of the demonstration in mind at all times, and prepare to demonstrate only one step at a time. Many operations and activities can be shown by using one of several methods. It is the responsibility of the instructor to determine the best method. If, however, it is necessary for students to learn more than one method of performing a given operation, then a separate and distinct demonstration should be given for each method to be taught. Confusion results when two obviously different methods are attempted within one demonstration. If the difference is very slight, however, it may be explained during one demonstration. Where major differences exist, preparation

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must include separate demonstrations.

- (4) Anticipate those steps in the demonstration which may cause difficulty. The instructor must understand that all students do not have equal capacities for learning; hence, some parts of the instruction may afford greater difficulty in understanding. Some supplementary instruction must be made available to the slower student. This may be in the form of tutorial instruction and necessitate a second performance of the demonstration.
- (5) Formulate a plan in which there is provision for each step in the performance of the operation. The plan of the instructor must include accepted techniques in demonstrating his subject. With this completed plan a final rehearsal is in order. This rehearsal is an important aid in determining the amount of time to be consumed in the demonstration and in acquainting the instructional staff who may participate with the entire procedure. It is important, too, in that it assures the instructor of a greater amount of success in the actual demonstration in the presence of his students.

Presentation stage. Since the demonstration is an integral part of the lesson, it must be performed in the correct way, at the correct time. In conducting a demonstration the instructor must:

- a. State the purpose, and explain the process briefly. Student's interest will be dulled considerably by an extensive preliminary explanation.
- b. Show how and explain how at the same time. During the demonstration the instructor is expected to explain the actual performance. Immediately preceding the performance of a given step in a demonstration, the instructor must tell exactly what he intends to do. While he is performing the step he must explain his procedure and indicate the reason or reasons for his executing the step. The instructor must also time his explanation so that only a few seconds elapse between each of his remarks. Each important step must be emphasized so that it is clear to the student. The instructor must demonstrate the first step, give the name of the second step, then demonstrate it showing clearly a break between the two. These steps must be well-outlined for the student so that he will be able to repeat the performance accurately. The instructor is expected to omit unnecessary information and stress the how and why of the procedure. No explanation of the steps in an operation should neglect an emphasis of the safety precautions. In many cases personal safety is one of the most important by-products of the demonstration method of teaching.

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- c. Be sure each student can see. The instructor must stand in such a position as to allow each student to see the details of his performance. Occasionally this will be impossible, and it will be necessary for the instructor to repeat the demonstration.
- d. Use visual aids to supplement the demonstrations. Although the demonstration involves the use of tools, and other special equipment, it is often necessary to use specific visual aids to convey complete understanding. When minute details are to be stressed, charts, film strips, or ~~cut-away~~ models are of great value. In demonstrations consisting of several steps or phases, the blackboard can be used. Each step as it is performed can be listed, and in this way the student is able to see each phase as part of the entire performance.
- e. Check frequently to determine the student's understanding of the instruction. This can be done by asking questions or requiring individuals to repeat the performance before the group. There are major steps in most operations which constitute logical points for checking. An occasional question will be a means whereby the instructor can evaluate the student. The instructor should invite questions from the students. After each major phase of the demonstration, questions should be called for by the instructor; however, time for questions can not always be pin-pointed. It is best to inform students that they may interrupt the demonstration as misunderstandings arise, that they do not have to wait until the end of the demonstration. They should not, however, be permitted to interrupt the demonstration of a given step, for frequently many questions which would normally arise will be answered for them.
- f. Use assistants to the greatest advantage. Many awkward gaps which may occur during a demonstration can be avoided by using assistants. These assistants should be used to contribute to the effectiveness of the instruction. They should be trained to time their movements with the instructor's explanation and should recognize their cues and perform their functions quietly and efficiently without the instructor's having to give them directions during the class activity.
- g. Summarize the essential point at the class of the demonstration. In this he enumerates and emphasizes the steps involved. As he enumerates each step, the instructor should present in final form those points which are important. When he is summarizing, the steps must be presented in the same order as they occurred in the demonstration. None should be omitted. If a demonstration contains several steps, two or three brief summaries should be given during the demonstration. These summaries constitute repetition and drill for the student.
- h. Set high standards for his students. The instructor must be able to perform the demonstration skilfully. This is important in order

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to develop the student's respect and confidence in the instructor's ability as a technician and as a teacher.

The application stage. In order for a student to learn he must be told what he is to do, shown how to do it, and then given an opportunity to practice until he is able to do it. This is a simple approach to instruction, and it is psychologically sound. It is especially important in view of the fact that an analysis of the duties of a student reveals that in most of his jobs he is called upon to do; the things he must know are usually supplementary to doing. If the instructor will remember to tell, show, and do, his instruction will be grounded on solid basis. The application stage is the stage of the instructional process in which students are given the opportunity to put into practice the procedures and ideas previously presented in the presentation stage.

There are many opportunities for applicatory exercises in training. The ratio of the time spent in presentation to time spent in application depends upon the subject and the state of training of the troops; but, in general, the instructor will spend more time conducting practical exercises than he will spend in presenting the basic material. The success of the instructions depends upon the effective use of the application stage. Every instructor must be constantly on the alert for opportunities to use this stage of instruction in his teaching. In most instructional situations the student can be given an opportunity to apply the principles taught soon after the presentation. One mark of a good instructor is his ability to set up situations that require his students to apply the principles or procedures he is teaching.

In order to use this stage of instruction effectively the instructor must know the methods of application and how they are employed. He must have some general rules to follow in the conduct of practical exercises, and he must understand the general principles which must be considered by the instructor when conducting the applicatory exercise.

How we learn skills and techniques. In the application stage we are primarily concerned with the development of skills and techniques. This development normally passes through definite learning phases:

a. Learning a skill.

(1) Building a concept of the skill. The student gains an idea of the procedure. This is usually accomplished by:

(a) Demonstration.

(b) Explanation.

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- (c) Directing students to other information such as safety precautions, instructional sheets, study assignments, and such.
- (2) Developing the skill. Here the model set forth in the demonstration is limited by the student. His trial and error process is guided by the instructor.
 - (a) The trainee imitates the demonstration.
 - (b) His activities are directed.
 - (c) Progress is evaluated by the instructor who encourages the trainee to evaluate his own progress.
- (3) Practice for accuracy and skill. The aim here is usually to make the act or procedure automatic.
- b. Learning a technique. In learning a technique for the handling of highly intricate problems and procedures, the above phases of learning may not strictly apply, but, in general, the instructor can use them as a guide to his selection of methods for use in the conduct of practical work. When faced with the development of techniques which require problem solving on a relatively high level, the instructor should keep in mind that the important thing is to teach how to solve problems rather than how to arrive at an approved solution to a problem. Trainees should learn to approach their problems using a thought process similar to that used in the estimate of the situation. Briefly, this process is:
 - (1) Recognize the problem.
 - (2) Assemble data bearing on the problem.
 - (3) Suggest solutions.
 - (4) Evaluate possible solutions.
 - (5) Accept the best solution as your action.

Methods of instruction used in the application stage. Much of the success of applicatory training depends on the choice of the proper method or methods of instruction. Those methods most commonly used in the application stage will be discussed. It should be noted that each method is designed to meet a specific requirement of some phase of the learning process or some type of learning exercise.

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a. Controlled practice method (group performance). In controlled performance, all men in a class do the same thing at the same rate and at the same time under the supervision of the instructor. The steps in this method are:

- (1) Explain and demonstrate while the students observe.
- (2) Talk the trainees through the practice.
- (3) Correct errors.

This procedure is applied to each phase of a skill or operation until the skill or operation is covered completely. The amount of material or number of phases that the instructor explains and demonstrates before the class performs will depend on the nature of the subject and the ability of the trainees. Initial application in subjects like the disassembly of weapons, because of their complexity, is best carried out by this procedure. In fact, all skills and operations, except for very simply ones which the trainees can learn quickly and accurately by watching one or two complete demonstrations and then practicing independently, should be taught initially by the controlled performance method.

One of the values of the controlled performance method is that it affords maximum control and observation of student activities, and, consequently, it facilitates on-the-spot correction of errors made by students during the imitation step. To achieve this, however, the instructor must give to the class clear directions about the procedure for controlled performance. For example, at the beginning of a lesson on the disassembly of a weapon, the instructor will tell the class that he will explain and demonstrate step by step the process of disassembly; that they are to give careful attention to the explanation and demonstration; that they are not to perform the step until after the explanation and demonstration, and then only when he gives the entire class a signal to start; and that they are to perform only the step demonstrated and at no time get ahead of the instruction. The instructor must always be alert to see that the trainees follow such directions. It is a common failure for instructors to become so engrossed in their own work that they fail to keep the class together on the steps. When the class is large and assistant instructors must be used, it is necessary that they, too, know thoroughly not only the subject, but also the controlled performance procedures.

Because the controlled performance method does afford maximum control and observation of student activities, it is ideally suited to the first two steps of learning a skill, that is, gaining the concept and perfecting the movement pattern. Once these two steps in skill

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training are accomplished, it would be a mistake to continue using the controlled performance method to achieve the last step of skill training, practicing to make it automatic. To achieve this step, a method which permits independent practice is required.

- b. Individual performance method. The individual performance method of application allows the student to work at his own rate of speed and to perform a skill or operation as a whole. In this method the instructor exercises a minimum of control over the student's activity. Supervision, however, is important. The instructor must observe closely and correct any errors which might lead to the formation of wrong habits or procedures.

Besides succeeding controlled performance in the last step of skill training, individual performance is also used as the initial method of application in teaching simple skills and techniques. A lesson in map reading is a good example of where this method may be used as the initial application exercise. The instructor, in presenting the lesson, explains and demonstrates how to measure distance on a map. In the practical exercise following the presentation, the students practice measuring distances, each man working independently at his own rate and with his progress checked by the instructor and his assistants.

- c. Coach and pupil. This method is used very effectively for teaching men who have mastered the basic fundamentals of a skill or technique. It is a method in which the trainees are paired off and act alternately as coach and pupil under the direction and supervision of the instructor and his assistants. When properly applied and guided, this method should cause trainees to think as well as do, increase alertness, and develop initiative, reliance, and skill in giving directions and commands. It lends itself to the teaching of such subjects as bayonet practice, unarmed defense, and first aid.
- d. Team practice. Team practice describes not only a method of application, but also the final phase of a unit of training in which all previous training culminates. It is used when individuals perform related tasks in a group. Team practice is primarily concerned with team skills, techniques, and in general just how a group of men function as a unit in solving field problems. Individual skills and techniques are secondary. During team practice, the instructor works as a team coach; the men are the players. Each man has learned his own role; now he performs as a member of the team. He participates in team "scrimmages" to learn timing, correct positions and procedures, and an appreciation of the part each team member plays in the operation. Team practice is usually conducted in two phases: technical and tactical.

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- (1) Technical phase. The team training of a crew, squad, or detachment should begin with "walk through" practice or practice at reduced distances and speeds. In this practice only team fundamentals should be stressed. No attempt should be made to simulate actual conditions in the initial exercises. This does not mean that the training should not be realistic, but realism in the initial exercises should stem from concentration on team fundamentals. For example, to introduce simulated battle conditions too soon and too suddenly will tend to obscure the learning of fundamentals. In this type of training the instructor should exercise control and make on-the-spot correction of any errors committed.
- (2) Tactical phase. As the team masters the technical fundamentals, the applicatory exercises should be expanded in scope so that all phases of actual operations are included. It is this objective toward which all prior team training leads. The tactical phase of team training should bring into play all the knowledge and skill of every man. The previous instruction and practice, which included a great variety of individual subjects, finally is fitted together into a single training period. The conditions and the requirements of the tactical exercises should be varied so that members of the team will develop judgment and facility in applying skills and techniques to the solution of new and varied tactical problems.

← Although the examples given here are primarily of the military maneuver type, the principles expressed are equally applicable to the training of any type of team or group which will later approach problem situations as a unit.

The conduct of practical work. The applicatory exercise must be adequately supervised by the instructor if it is to be effective. Frequently, instructors who are in charge of practical exercises get the false notion that they are not teaching. Actually, the application stage is as much part of the learning process as the presentation stage, and the instructor who feels that his job is complete after he explains and demonstrates the subject matter has fallen into a dangerous way of thinking. The instructor can facilitate learning during the practical exercise if he follows a few simple principles in his conduct of the student activity.

- a. Present specific directions. Be sure every trainee knows what he is to do, why he is to do it in the manner described, and where he may obtain help. The capable instructor will anticipate most of the questions which will arise and be able to answer them in clear and concise directions. There is no excuse for trainees wondering what they are supposed to do at the start of a practical exercise.

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- b. Repeat instruction when the need arises. If a majority of the trainees seemed to miss certain fundamental points, the explanation and demonstration should be repeated for the entire class. If only a few trainees require additional instruction, the assistants can give individual aid, or a small group may be taken to one side where the materials can be re-taught.
- c. Achievement standards are progressive. In the initial applicatory exercises, emphasis should be placed upon completeness and accuracy of form or procedure. After the initial application, the standards of the applicatory work should be higher, and less assistance should be necessary. Merely to repeat an activity has little value unless higher standards are expected. The trainee must be made to appreciate the progressive nature of his practical work, or he will feel that the exercise is something to make him busy.
- d. Conditions should be realistic. The sense of realism should prevail in all applicatory training. Keeping conditions of the applicatory exercise as nearly like those that would be encountered in battle or actual use is one way of making training realistic. This, however, is not always possible or desirable in the initial stages of application. Here realism must stem from the student's understanding of why it is necessary for him to develop certain skills and techniques. He must realize that he is learning skills and techniques for an ultimate military purpose. Good instruction is always realistic.
- e. Things should be applied as taught. Practice does not always make perfect. Perfection is achieved through practice only if the trainee practices the right movements and procedures. It is not enough for the instructor merely to explain and demonstrate the correct way of doing a thing; he must also, through careful supervision of every applicatory period of instruction, make sure that the student practices the skill or technique correctly--as it was taught.
- f. Indirect assistance is best. The instructor and the assistant instructors must be ready to give assistance at all times during the practical work; the student should not have to search for the instructor when he encounters difficulty. In giving aid to the student, the instructor should be careful not to give too much direct assistance. Whenever possible, assistance should be given indirectly by asking the student to recall certain knowledge or by guiding the student with appropriate questions in analyzing his own difficulty. This manner of giving assistance will encourage the student to rely upon his own resourcefulness and initiative.
- g. Constant supervision is imperative. The fact that students are busy and seemingly at work is not a guarantee that learning is

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taking place. The success of practical work is not measured by the trainee's apparent activity, but by the degree of desirable change which is brought about in his progress. For practical work to be highly successful, the instructor must keep specific points in mind when supervising the exercise. These points are:

- (1) Do trainees know how, why, and what they are doing?
- (2) Does the activity contribute to the realization of the training objective?
- (3) Are students performing according to instructions?
- (4) Is maximum and adequate use made of equipment, materials, and personnel?
- (5) Are safety measures observed?
- (6) Has ample time been provided?

h. Each step must be learned before moving to the next. The instructor should avoid introducing too many operations, procedures, principles, or problems at any one time. Introduce a few learning activities, provide for sufficient practice, review material taught and practiced, and then proceed to the next unit of instruction. Be certain that trainees have learned the essentials before proceeding to the next stage. Keep the practical work progressive.

Improving the demonstration. In order to improve his use of this demonstration method of teaching, the instructor should make every effort to evaluate his work. If he has supervision, he should avail himself of the supervisor's criticism and evaluation. A self-check can be made with little difficulty by the instructor's consideration of the following questions in relation to each demonstration he presents.

- a. Were the students ready for the demonstration?
- b. Were all necessary tools, equipment, and personnel available and properly placed?
- c. Were all students able to see and hear?
- d. Were the principal steps presented in the order indicated on the lesson plans?
- e. Did the instructor ask questions? Did the students present pertinent questions?

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- f. Were supplementary visual aids used most effectively?
- g. Was information presented which might well have been omitted? Was information omitted which should have been included?
- h. Was the student's interest maintained throughout the demonstration?

Summary. The demonstration is one of the most effective methods of instruction. Learning is more real and permanent when information is presented by showing the student actual functions and operations. Instruction of a specialized type can not be reduced to a mere telling process. Showing or demonstrating is often more practical. A well-planned and well-conducted demonstration can be a shorter route to field learning. With immediate application of the subject matter of the demonstration by the student, the instruction is most likely to be permanent.

It is necessary then that each instructor improve his use of the demonstration method of instruction. Since its benefits are many, and its limitations few, a high standard of presentation is essential. An occasional review of the basic principles of a good demonstration will assist the instructor in attaining the objective of all phases of his instruction.

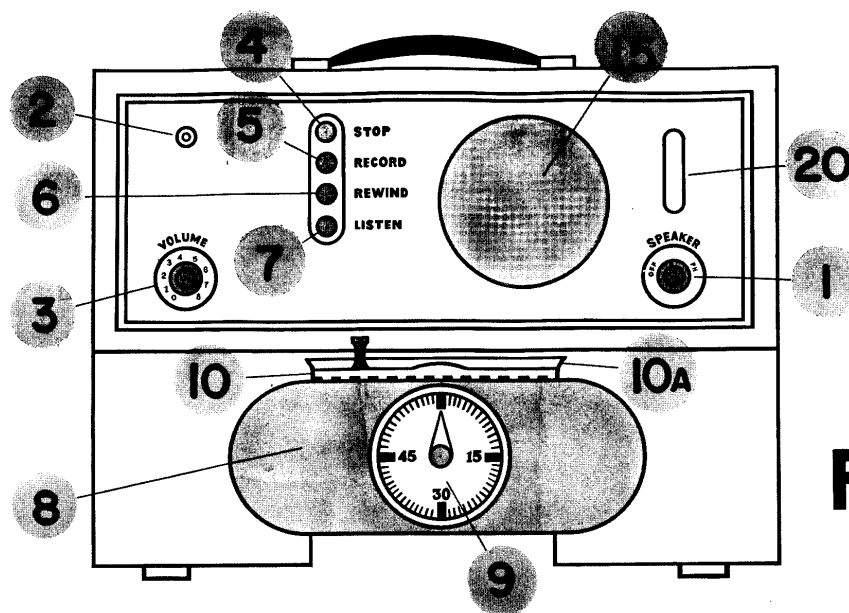
170
DEMONSTRATION

PIERCE WIRE RECORDER

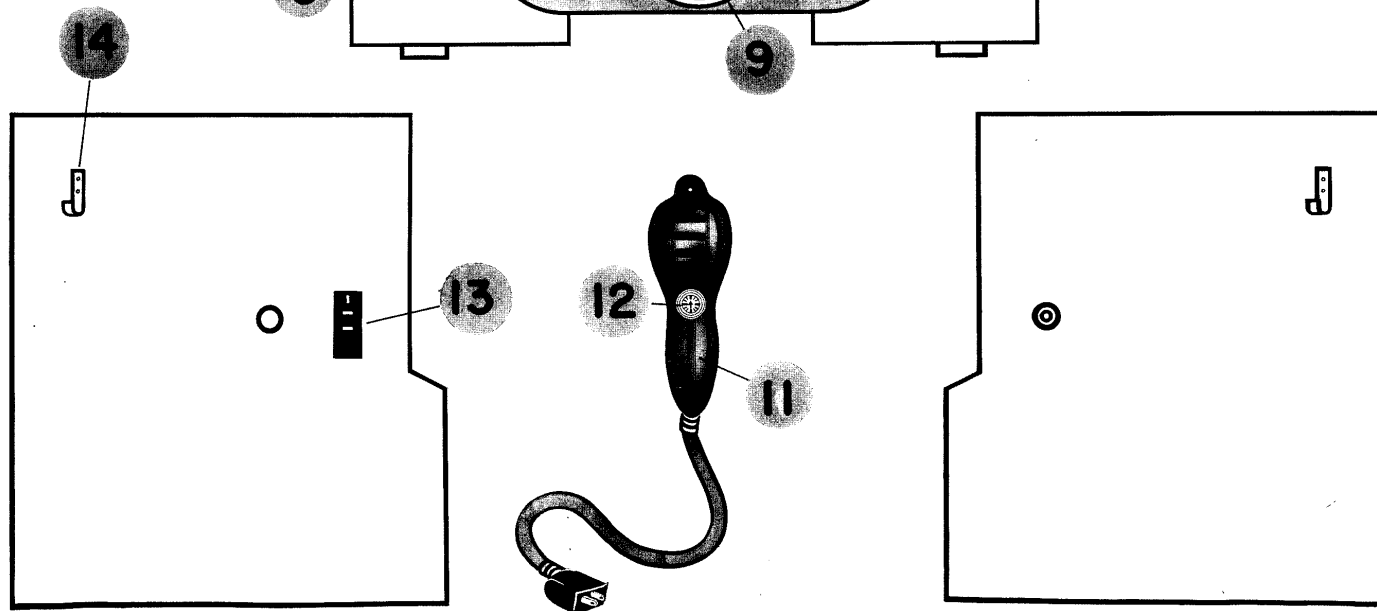
RECORDING

1. Put 2 prong plug into wall socket. A.C. 110V - 60 cycles.
2. Place CARTRIDGE (8) in position as shown. Be sure both ends are snapped securely in place.
3. Pull LEVER (10) above cartridge forward into locking position. (Pull outward on the CARTRIDGE (8) to make sure it is locked into the recorder.)
4. Insert the three-prong plug at the end of the HAND MICROPHONE (11) cable into the INPUT SOCKET (13) at the left end of the recorder.
5. Turn the OFF-SPEAKER-PHONE KNOB (1) at the right to the SPEAKER position. This turns the power to the recorder "ON." The light at the left (2) will indicate that the machine is turned on.
6. When necessary to rewind the wire, depress the REWIND BUTTON (6). Rewinding may be stopped at any time by depressing the STOP BUTTON (4). However, the rewind will stop automatically when the TIMER (9) reaches zero.
7. To make a recording, depress the RECORD BUTTON (5). Adjust the VOLUME CONTROL (3) so the white indicator is at desired position.
8. If the supplied MICROPHONE (11) is to be used, depress the BUTTON (12) on the microphone and hold down during the recording. The BUTTON (12) may be locked down by making a quarter turn to the right or left. To stop the recording, release the BUTTON.
9. During recording, the TIMER DIAL (9) on the CARTRIDGE (8) indicates the time in minutes.
10. When all the wire on the cartridge is used the WHITE LIGHT (20) at the right flashes on.
11. To stop recording, depress STOP button and REWIND BUTTON to rewind the wire to the point where you wish to listen.
12. Depress LISTEN button (7) and adjust volume (3). Speaker is behind SCREEN (15).
13. After listening, rewind the wire. Turn knob (1) to the extreme left to turn off the machine.
14. To remove the cartridge, push in the lever (10) and depress the release bar (10-A) above the cartridge. The cartridge will snap forward so it can be easily removed from the machine.
15. MICROPHONE (11) hangs on HOOK (14) at left end of recorder.

Caution: Before recording play several minutes of the cartridge to determine whether cartridge is clear of any previous recording since recording over any previous use of wire will erase all prior recording.



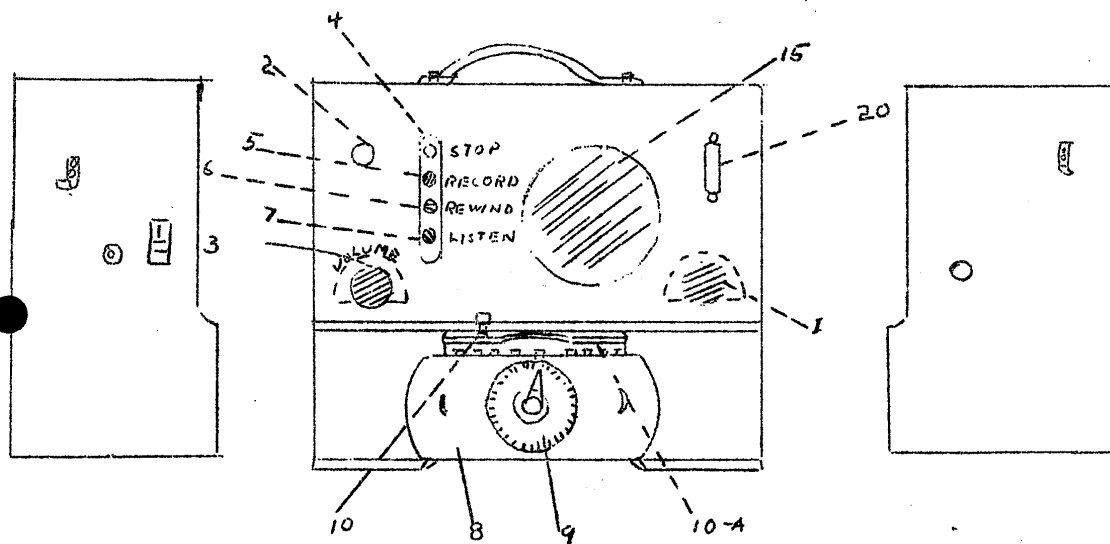
PEIRCE WIRE RECORDER



RECORDING INSTRUCTIONS FOR PIERCE WIRE RECORDER

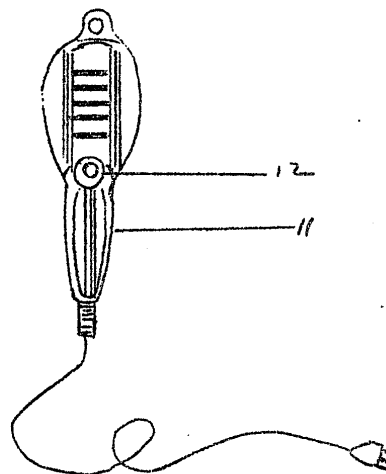
1. Put 2 prong plug into wall socket.
2. Place CARTRIDGE (8) in position as shown. Be sure both ends are snapped securely in place. Pull outward on the CARTRIDGE (8) to make sure it is locked into the recorder.
3. Pull LEVER (10) above cartridge forward into locking position.
4. Insert the three-prong plug at the end of the HAND MICROPHONE (11) cable into the INPUT SOCKET (13) at the left end of the recorder.
5. Turn the OFF-SPEAKER-PHONE KNOB (1) at the right to the SPEAKER position. This turns the power to the recorder "ON."
6. When necessary to rewind the wire, depress the REWIND BUTTON (6). Rewinding may be stopped at any time by depressing the STOP BUTTON (4). However, the rewind will stop automatically when the TIMER (9) reaches zero.
7. To make a recording, depress the RECORD BUTTON (5). Adjust the VOLUME CONTROL (3) by turning the knob until the signal to be recorded closes the RECORDING LEVEL INDICATOR (2) approximately 50%.
8. If the supplied MICROPHONE (11) is to be used, depress the BUTTON (12) on the microphone and hold down during the recording. The BUTTON (12) may be locked down by making a quarter turn to the right or left. To stop the recording, release the BUTTON.
9. During recording, the TIMER DIAL (9) on the CARTRIDGE (8) indicates the time in minutes.

PIERCE WIRE RECORDER

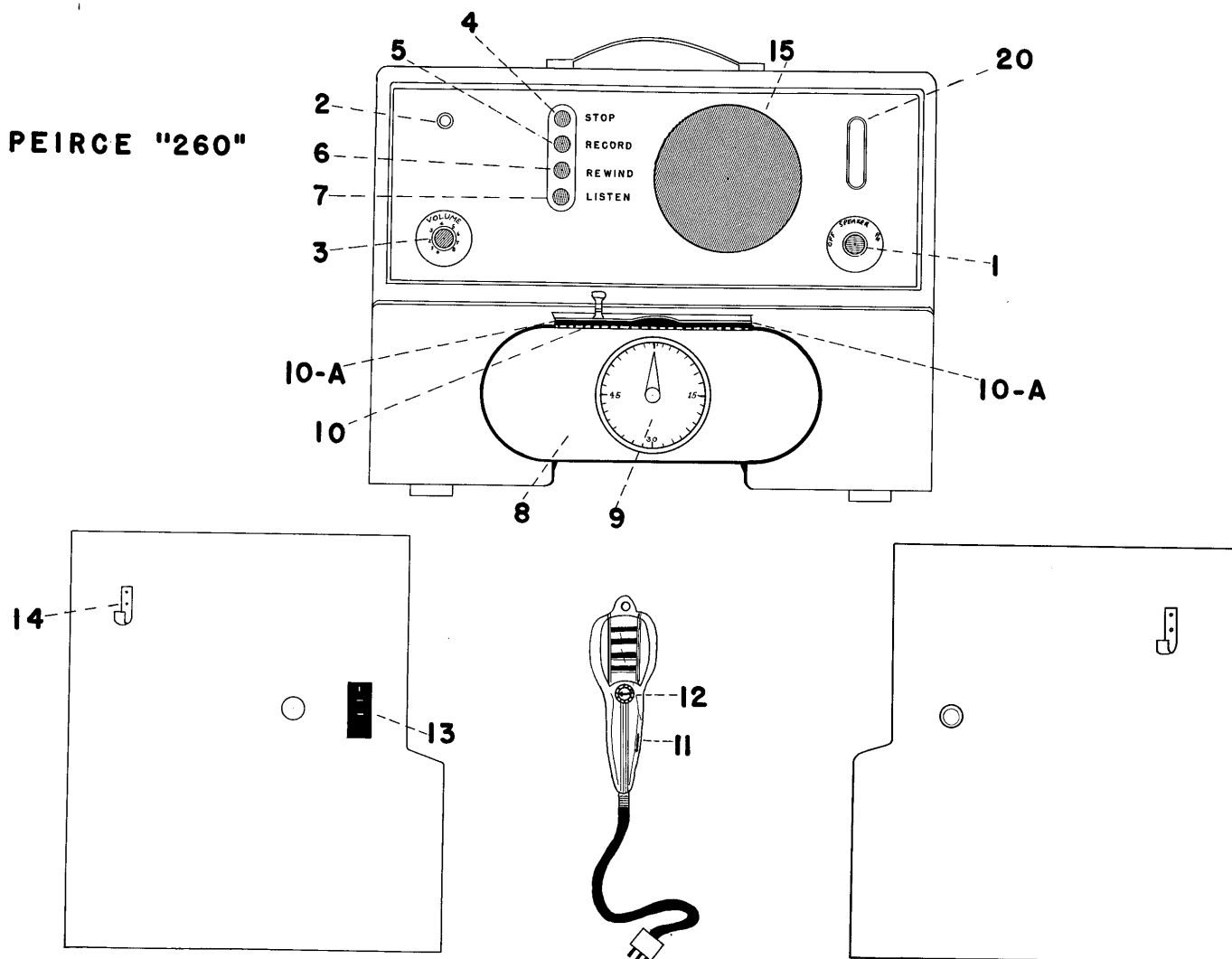


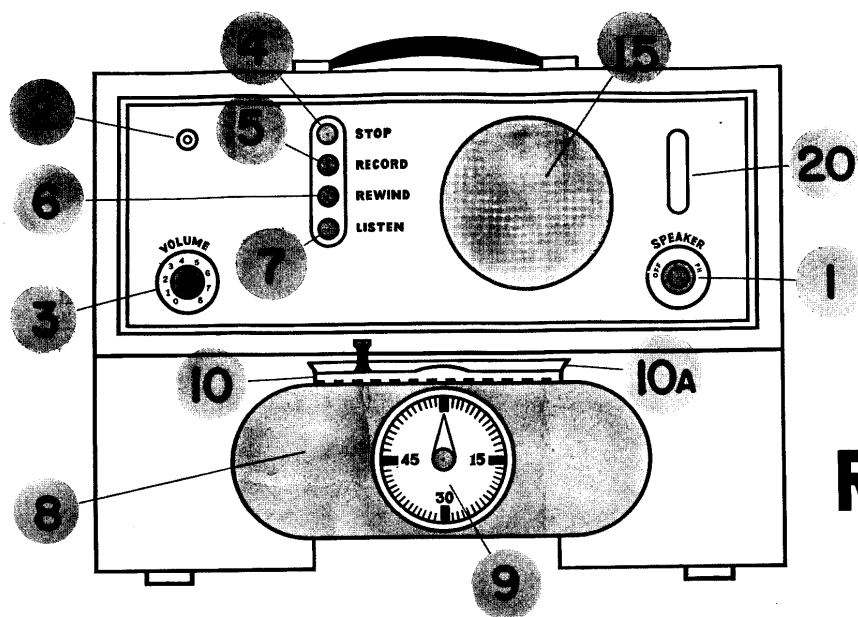
LEGEND

1. Off-Speaker phone knob.
2. Recording level indicator.
3. Volume Control.
4. Stop button.
5. Record button.
6. Rewind button.
7. Listen button.
8. Cartridge.
9. Timer dial.
10. Lever.
11. Hand microphone.
12. Microphone button.
13. Input socket.

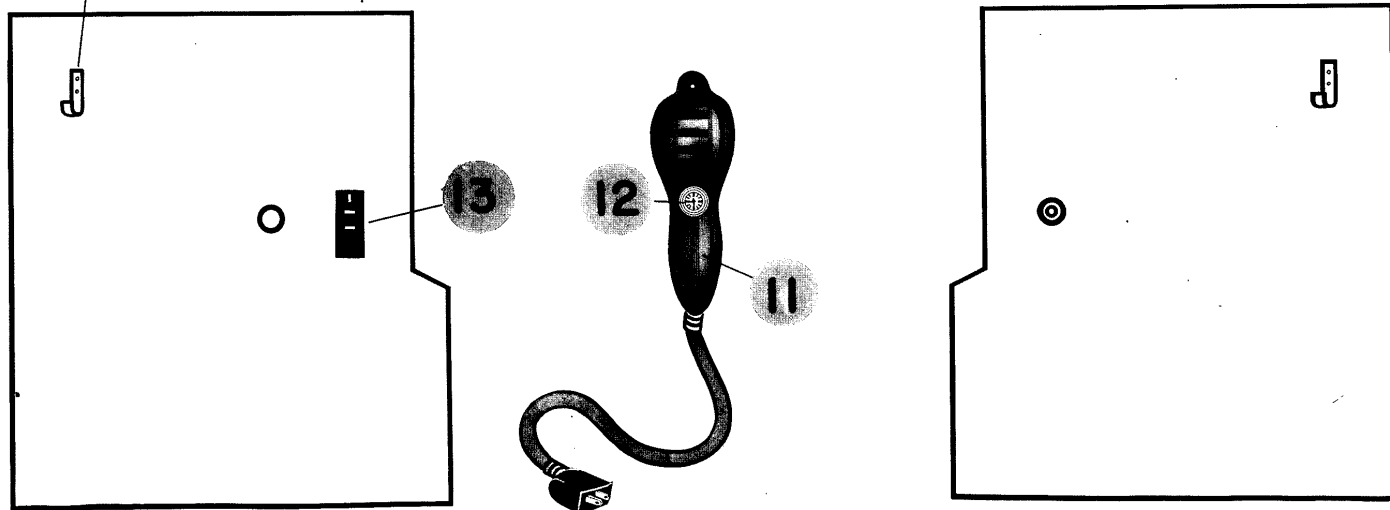


PEIRCE "260"





PEIRCE WIRE RECORDER



*M*ETHODS of INSTRUCTION USED in the APPLICATION STAGE.

- A...▶ Controlled practice (group performance)
- B...▶ Independent practice methods
- C...▶ Coach and pupil
- D...▶ Team practice
 - Technical
 - Tactical

DEVELOPING SKILLS AND TECHNIQUES

